

Amendment and Response

Serial No.: 09/519,448

Confirmation No.: Unknown

Filed: 5 March 2000

For: FLUID HANDLING DEVICES WITH DIAMOND-LIKE FILMS

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18. (AMENDED) A fluid handling device comprising a microfluidic article comprising a microfluidic handling architecture comprising a fluid handling surface wherein at least a portion of the fluid handling surface includes a hydrophilic diamond-like film disposed thereon, wherein the film comprises diamond-like glass comprising a dense random covalent system comprising on a hydrogen-free basis at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than or equal to about 45 atomic percent oxygen.

19. (AMENDED) A fluid handling device comprising a substrate and an optically transmissive and hydrophilic film disposed on at least a portion of the substrate, wherein the film comprises diamond-like glass comprising a dense random covalent system comprising on a hydrogen-free basis at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than or equal to about 45 atomic percent oxygen, and further wherein the film has an extinction coefficient of no greater than 0.010 at 250 nm.

20. (AMENDED) A fluid handling device comprising a substrate and a diamond-like glass film comprising a dense random covalent system comprising at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than about 45 atomic percent oxygen, on a hydrogen-free basis, disposed on at least a portion of the substrate.

24. (AMENDED) A fluid handling device comprising a microfluidic article comprising a microfluidic handling architecture including a fluid handling surface wherein at least a portion thereof has disposed thereon a film comprising diamond-like glass which comprises a dense random covalent system comprising on a hydrogen-free basis at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than or equal to about 45 atomic percent oxygen.

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25. (AMENDED) A fluid handling device comprising a microfluidic article comprising a microfluidic handling architecture including a non-fluid handling surface wherein at least a portion thereof has disposed thereon a diamond-like film that is optically transmissive, hydrophilic, or both, wherein the film comprises diamond-like glass comprising a dense random covalent system comprising on a hydrogen-free basis at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than or equal to about 45 atomic percent oxygen.

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26. (AMENDED) A method of manufacturing a hydrophilic diamond-like film, the method comprising treating a diamond-like film in an oxygen-containing plasma, wherein the film comprises diamond-like glass comprising a dense random covalent system comprising on a hydrogen-free basis at least about 30 atomic percent carbon, at least about 25 atomic percent silicon, and less than or equal to about 45 atomic percent oxygen.